Simply the

STB Systems, Inc.

DSP 550 Adapter

User's Guide

Two high performance 82C550/16550 Universal Asynchronous Receiver Transmitter serial ports and one bi-directional capable parallel port for PC compatible systems.

FCC Statement

Certified to comply with Class B limits, Part 15 of FCC Rules. See instructions if interference to radio reception is suspected.

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. Please note that all peripherals must be attached with shielded cables to prevent interference. This device has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

1. Reorient the receiving antenna.
2. Relocate the computer with respect to the receiver.
3. Plug the computer into a different outlet so that the computer and receiver are on different branch circuits.
4. If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

The user may find further information in the booklet, "*How to Identify and Resolve Radio-TV Interference Problems.*" This booklet is prepared by the Federal Communications Commission and is available from the U.S. Government Printing Office, Washington, DC 20042. Stock Number 004-000-00345-4

In order for an installation of this product to maintain compliance with the limits for a Class B device, shielded cables must be used for the connection of any devices external to this product.

This product is designed and manufactured to comply with approved safety standards (including UL478) for information processing and business equipment.

Features

- Compatible with the 82C550 and 16550 Universal Asynchronous Receiver Transmitters (UARTs).
- Two high speed RS-232 serial ports which support baud rates of up to 112k.
- One full bi-directional parallel port capability.
- On board status registers to provide error conditions type and status of the transfer operations being performed.
- Complete MODEM handshaking capability.
- FIFO (First In First Out) mode capability with 16 byte buffer for data transmit/receive to reduce the number of interrupts presented to the CPU.
- Processor interrupt system, software configurable to minimize computing required to handle the communications link.
- IRQ and address selection flexibility for each I/O port.

Hardware Configuration

Use the 14 jumpers to configure the adapter for use in your system. The following table describes the various jumpers.

Jumper	Function
J1	Parallel Port IRQ Select
J2	Serial Port #1 IRQ Select
J3	Serial Port #1 IRQ Select
J4	Serial Port #2 IRQ Select
J5	Serial Port #2 IRQ Select
J6	Parallel Port Bi-directional Enable/Disable
J7 & J8	Serial Port #1 Enable/Disable
J9 & J10	Serial Port #2 Enable/Disable
J11 & J12	Parallel Port Enable/Disable
W1 & W2	+5 Volt/Ring Indicator Select

Table 1 - Dual Serial/Parallel Jumper Descriptions

The layout of the DSP 550 adapter is shown below. See Table 1 on the next page for a description of the jumpers.

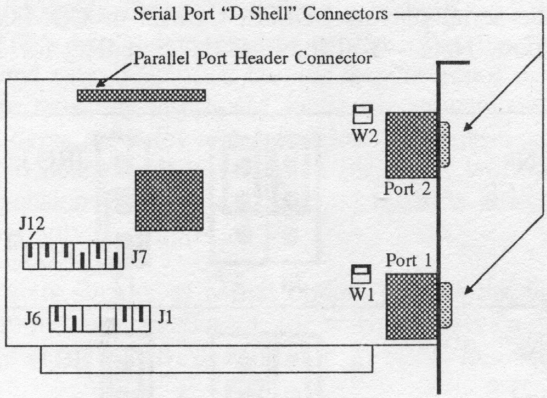
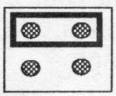


Diagram of the DSP 550 adapter

+5 Volt/Ring Indicator Select

W1 and W2 (W1 for Port #1 and W2 for Port #2) provide a flexibility not found on many asynchronous adapters. These jumpers determine whether a "Ring Indicator" signal or "+5 Volt" power supply line is provided to the serial device connected to the respective serial port. Typically, the "+5 Volt" supply is required only for early generation mouse systems or specialty serial devices. Shown below is the respective jumper settings for W1 and W2.

Ring Indicator*



+5 Volts

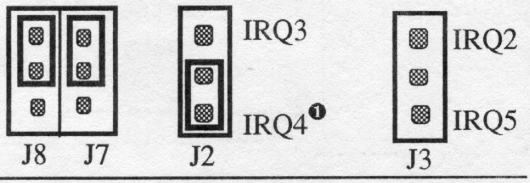
The Ring Indicator setting shown here is the default for W1 and W2. This diagram is representative of W1 and W2

*Default Setting

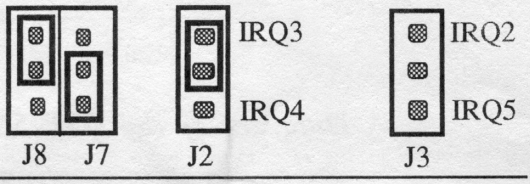
Asynchronous Serial Port #1

This serial port is functionally identical to an IBM Asynchronous Serial Communications Adapter. By using the proper cable, this port can be connected to any serial device that supports asynchronous RS-232 C communications. Below are the jumper settings for enabling the serial port as COM1:, COM2: or COM3:, and disabling the serial port. Note - You may set the port IRQ for 2, 3, 4 or 5.

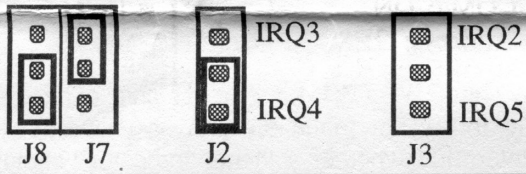
COM1: ON*
Address: 3F8
IRQ4*



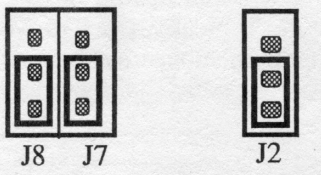
COM2: ON
Address: 2F8
IRQn n = 2,3,4, or 5*



COM3: ON
Address: 3E8
IRQn n=2,3,4, or 5*



SERIAL
PORT #1 OFF



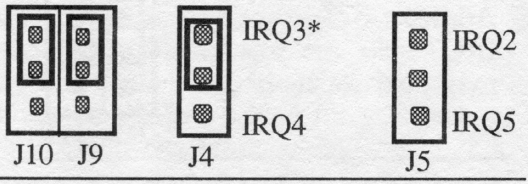
NOTE - The serial ports must be set to different com port numbers each with unique IRQ in order to avoid bus conflict. On the DSP 550 ports cannot share a common port or interrupt.

*Default Setting

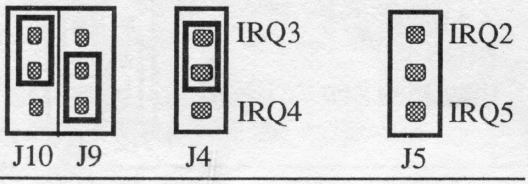
**This jumper has no effect when this port is disabled.

This serial port is functionally identical to an IBM Asynchronous Serial Communications Adapter. By using the proper cable, this port can be connected to any serial device that supports asynchronous RS-232 C communications. Below are the jumper settings for enabling the serial port as COM2:, COM3: or COM4:, and disabling the serial port. Note - You may set the port IRQ for 2, 3, 4 or 5.

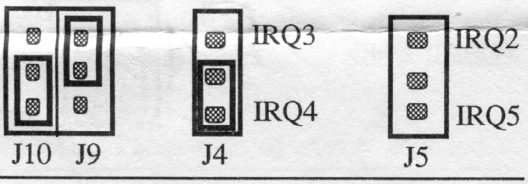
COM2: ON*
Address: 2F8
IRQ3*



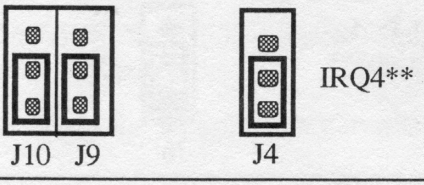
COM3: ON
Address: 3E8
IRQn n = 2,3,4, or 5*



COM4: ON
Address: 2E8
IRQn n = 2,3,4, or 5*



SERIAL
PORT #2 OFF



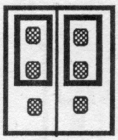
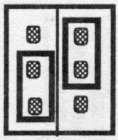
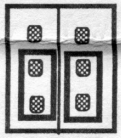
NOTE - The serial ports must be set to different com port numbers each with unique IRQ in order to avoid bus conflict. On the DSP 550 ports cannot share a common port or interrupt.

*Default Setting

**This jumper has no effect when this port is disabled.

Parallel Port

This port can be configured as I/O port address 378H, address 278H or can be disabled to avoid addressing conflict with other installed devices. This port can also be configured as either a bi-directional (two-way data transmission) or mono-directional (one-way data transmission) parallel port.

Address: 378 IRQ7 may also set to IRQ5	 J12 J11	 IRQ7* IRQ5 J1
Address: 278 IRQ5 may also set to IRQ7	 J12 J11	 IRQ7 IRQ5 J1
Parallel Port OFF	 J12 J11	 IRQ5** J1
Parallel Port Bidirection***	 **ON** J6	 **OFF**** J6

*Factory Setting

**This jumper setting has no effect with the Parallel Port disabled.

***This jumper enables or disables the Bi-directional capabilities of the parallel port on the DSP 550 board. When enabled, this port looks like the bi-directional parallel port found on the IBM PS/2 systems.

NOTE - Be sure no two I/O ports in the system with the same I/O address.

To Ensure Warranty Coverage

Read the warranty on the following page. Completely fill out the warranty card at the end of this section and mail it to STB Systems.

STB Technical Support (214) 234-8750

When you call for support it is helpful if you are sitting in front of your system with the case open. Also have on your desk, manuals and user's guides for your system, any installed adapters, and attached peripherals so that any information the technician may request is readily available. In addition, before calling for technical support please be sure to have the following information:

1. Part number of the adapter. This can be found on a small white label on the adapter in the form 1x0-nnnn-nnn.
2. The brand, type, speed, CMOS or Advanced CMOS settings, BIOS (e.g., AMI, Award, Phoenix, etc,) of the system in which the adapter is installed.
3. If you are having problems with a video adapter, get the monitor brand and model number (e.g., NEC 5C, Sony 1302, etc.), and vertical and horizontal scanning frequencies.
4. A description of the problem and sequence of events that led to the problem.
5. If the adapter has a ROM BIOS, the BIOS revision number. This can be found on the BIOS label.
6. Paper and pencil to write down the technician's name and any instructions.
7. A list of the software you are using including: which operating system (e.g., PC-DOS 3.0, MS-DOS 5.0, DR-DOS 6.0, OS/2.2.0, etc.) application software, memory managers, and a list of device drivers and memory resident software installed.

STB technical support hours are from 8:00 a.m. to 6:00 p.m. CST, Monday through Friday. For support call (214) 234-8750. The technical support department also maintains a 24 hour electronic bulletin board service (BBS). The BBS is a free product support service provided to all STB customers.

See the following page for BBS protocol.

BBS Protocol

Phone: (214) 437-9615	
Baud Rates:	2400 to 16.8k baud
Error Correction:	v.32bis, v.32, v.42, MNP-1+4, HST
Data Compression:	v.42bis, MNP-5
Data Stream:	No Parity, 8 data bits, 1 stop bit (N81)

Information Available

Software application drivers for video adapters, message bases for technical assistance, product updates and new product information, and various utilities.

Warranty

This product is warranted against defects in material and workmanship for a period of two years from date of delivery. STB's sole and exclusive liability shall be limited to repair or replacement, at STB's option, of any STB product, which is defective in material or workmanship and returned to STB, shipping prepaid, and in accordance with STB's applicable standard service rules in effect at that time. Your dated sales receipt or invoice is your proof of date of purchase. Before returning any board for repair, contact our Technical Support department for a Return Material Authorization (RMA) Number. No boards will be accepted for repair without an RMA number. Expansion memory not provided by STB is not covered by this warranty.

International customers should, as a first option, contact the vendor, from whom the product was purchased, for warranty service. However, you may contact STB, directly, for an RMA number if required.

No other warranty is expressed or implied, including, but not limited to, the implied warranties for merchantability and fitness for a particular application. STB will not be responsible for any damages consequential to the use or installation of any STB product. In no event shall STB be liable for special, incidental or consequential damages or losses or loss of profits. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. STB's products are not authorized for use as critical components in life support devices or systems without the express, written consent of the President of STB Systems, Inc. We reserve the right to refuse warranty repair on any board that, in our opinion, has been subjected to any abnormal electrical, mechanical, or environmental abuse. To assure coverage under this warranty, return your warranty registration card to STB within ten days of purchase of the product.

Any board returned out of warranty, or for user inflicted damage, will be subject to a service charge of $25.00 plus the price of parts, with the total not to exceed $35.00 without the consent of the owner. This charge reflects our cost and is subject to change. For current charges call STB at (214) 234-8750.

STB Systems, Inc.

DSP 550
Warranty Registration

Name_____
Company Name_____
Address_____
City_____
State_____ZIP Code_____
Phone_____Date Purchased_____

Purchased From: (Please check one and give name)

- ❒ Retail_____
- ❒ Distributor_____
- ❒ VAR/VAD_____
- ❒ Other_____

What computer will this product be used with? (Please give manufacturer and model)

_____

What major application software will be used with this product?

_____
_____
_____

How did you become aware of our products?

- ❒ Magazine (Which one?)_____
- ❒ Store Display
- ❒ Referral
- ❒ Store Salesperson
- ❒ Other_____

Do you use any other STB products? (If Yes , please list)

_____
_____

Number of PC's at this site_____

To ensure warranty coverage

Please fill out this warranty registration form and mail it, with any comments and suggestions on this product or user's guide, to:

STB Systems, Inc.
P.O. Box 850957
Richardson, Texas 75085-0957

920-0213-001

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